AMENDMENTS TO THE SPECIFICATION

The specification is amended as follows:

Please replace paragraph [0009] with the following paragraph:

[0009] In order to practice the present invention, the lithium ion battery is slowly discharged at a predetermined voltage sufficiently high so as not to damage the battery cells.[[.]] This predetermined voltage is a voltage above a destructive voltage limit, which is characteristic for a battery family. The discharge rate is also sufficiently low so to completely extract all lithium from the negative electrode and fully reincorporate it in the positive electrode, while the battery is being completely discharged. The discharge rate will vary depending upon the degree of discharge of the battery. After the battery has been completely discharged, power is provided to the battery from the power source to recharge the lithium ion battery so as to uniformly redistribute the lithium in the negative electrode. Upon completion of recharging, the capacity of the battery, previously reduced as a result of the reversible mechanism is restored.

Please replace paragraph [0018] with the following paragraph:

[0018] The anode 24 typically is formed as layers of an anode active material 50 supported on each side of an anode current collector 52. The cathode 26 typically is formed as layers of a cathode active material 54 supported on each side of a cathode current collector 56. The current collectors 52 and 56 are in electrical communication with the respective leads 34 and 36. In the case of the lithium-ion cell of the present invention, the anode active material 50 releases lithium ions 47 upon discharging of the electrochemical cell and accepts lithium ions 47 upon charging of the electrochemical cell. The cathode active material 54 accepts lithium ions 47 upon discharging of the electrochemical cell and releases lithium ions 47 upon charging of the electrochemical cell.

Please replace paragraph [0022] with the following paragraph:

[0022] The present invention provides the reconditioning process, Figure 2 at 240, that restores the battery to the balanced state 210. This process completely discharges the unbalanced cell at 230, causing the lithium atoms to reintercalate uniformly over the surface of the positive

electrode. Subsequent recharging of the battery cell, by connecting it to a power source, shown as 45 in Figure 1, uniformly distributes the lithium ions such as shown in Figure 2 at 210. This redeposition of the lithium atoms over the surface of the positive electrode essentially returns the battery cell to the new as-built state.

Please replace paragraph [0025] with the following paragraph:

[0025] The present invention accomplishes the reconditioning of the battery by discharging the battery cell by fixing the lower discharge voltage limit above the characteristic voltage step of 1.6 volts for this lithium ion battery employing a nickel oxide based positive electrode and discharging the battery to this lower discharge voltage limit. This reconditioning process has been demonstrated to be effective on a number of batteries. The discharge voltage limit was maintained at about 2.7 volts for each discharge cycle. This voltage was also set below the normal discharge voltage. Each cell was discharged at C/n to the fixed voltage limit for the battery, where C represents the rated capacity of the cell or battery. For example, a discharge cycle of C/2 represents discharging the battery to half of its capacity.. These steps were carried out a plurality of times. It was found that, while discharging a lithium ion battery employing a nickel oxide based positive electrode to the voltage constant limit at a temperature of about [[,]] 20° C (68° F) to a capacity of about ~~C/8096~~ C/8192, the cell was fully discharged and the negative electrode was fully depleted, without allowing the positive electrode to operate at an irreversible and ineffective voltage. The value of C/n will vary based on battery design, and while ~~C/8096~~ C/8192 is effective for lithium ion batteries employing nickel oxide-based cathodes, a different C/n number is effective for a different battery family. The battery is reduced in stages to a value of C/n where n approximately equals a value of 2^x, where x represents each successive stage in the reduction process. Thus the battery capacity is reduced to fully discharge the battery in stages 1-13 to values of C/2, C/4, C/8/, C/16, C/32, C/64, C/128, C/256, C/512, C/1024, ~~C/2024, C/4048, C/8096~~ C/2048, C/4096, C/8192, where C is the rated battery capacity. The value of C/n also may be reduced by raising the temperature above its nominal value. For example, the process of reconditioning can be accomplished to fully discharge the batteries in fewer stages at a capacity of C/1024 for lithium ion batteries employing nickel oxide-based cathodes by raising the nominal temperature of the battery from about 20° C (68° F) to about 40° C (105° F). But in certain applications, such as space applications, it is not

possible to control the nominal temperature of the battery for the time required to recondition the battery. The cell reached the state shown in Figure 2 at 250. After recharging, the cell was restored to the state shown in Figure 2 at 210. To complete the discharge to a capacity of ~~C/8096~~ C/8192, a time of about 2 weeks is required at a temperature of about 20°C. The discharging processing time can be reduced by increasing the temperature. Furthermore, the first step of the discharge cycle, to discharge the battery to a capacity of C/2 to the required voltage limit, is conducted at the required current for a time of about two hours. Each successive step is conducted at a lower current than the previous step and typically for a longer time, which provides time for the lithium ions to migrate. The discharge process can be conducted by any convenient means, such as by constantly increasing the resistance while lowering the current in successive steps to maintain the voltage at a constant rate. The discharge process of the present invention can be accomplished by connecting a power supply to the battery or cell in reverse connection as is well known. By maintaining the current at a constant value, an increased voltage in the power supply will result in a larger resistance applied across the cell

Please replace paragraph [0026] with the following paragraph:

[0026] Table 1, below, provides results for reconditioning of cells to different degrees of discharge. All of the cells were tested continuously tested through 250 cycles, being discharged for 1.2 hours and recharged for 4.8 hours. The different degrees of discharge are listed in column 1. At the end of the 250 cycles, the cells were fully discharged in accordance with the method set forth by the present invention. As can be seen, the cells exhibiting the deeper degree of discharge experienced the largest percent increase in capacity (C/2) Ah (Final) versus capacity C/2 Ah (Initial) when subjected to the ~~(C/8096)~~ (C/8192) Ah discharge and recharge of the present invention. The results support the previously discussed theory, as cells undergoing a deeper discharge should experience more of a skewing of the lithium atoms at the anode, as the lithium ions are allowed to migrate.